Figure 1

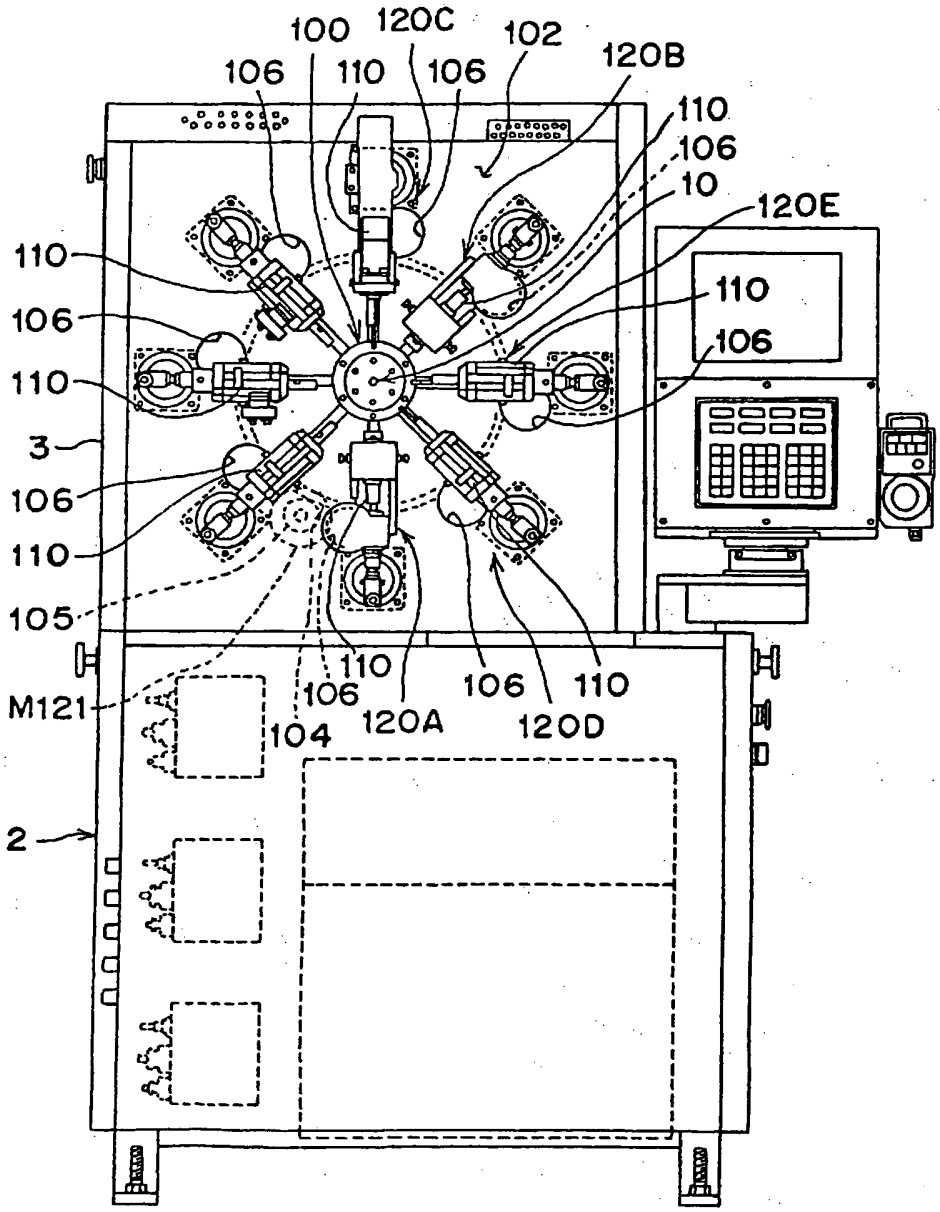

100
120C
102
106
110
106
120B
110
106
10
120E
110
106
110
3
106
110
105
M121
2
110
106
104
120A
106
110
120D

Figure 2

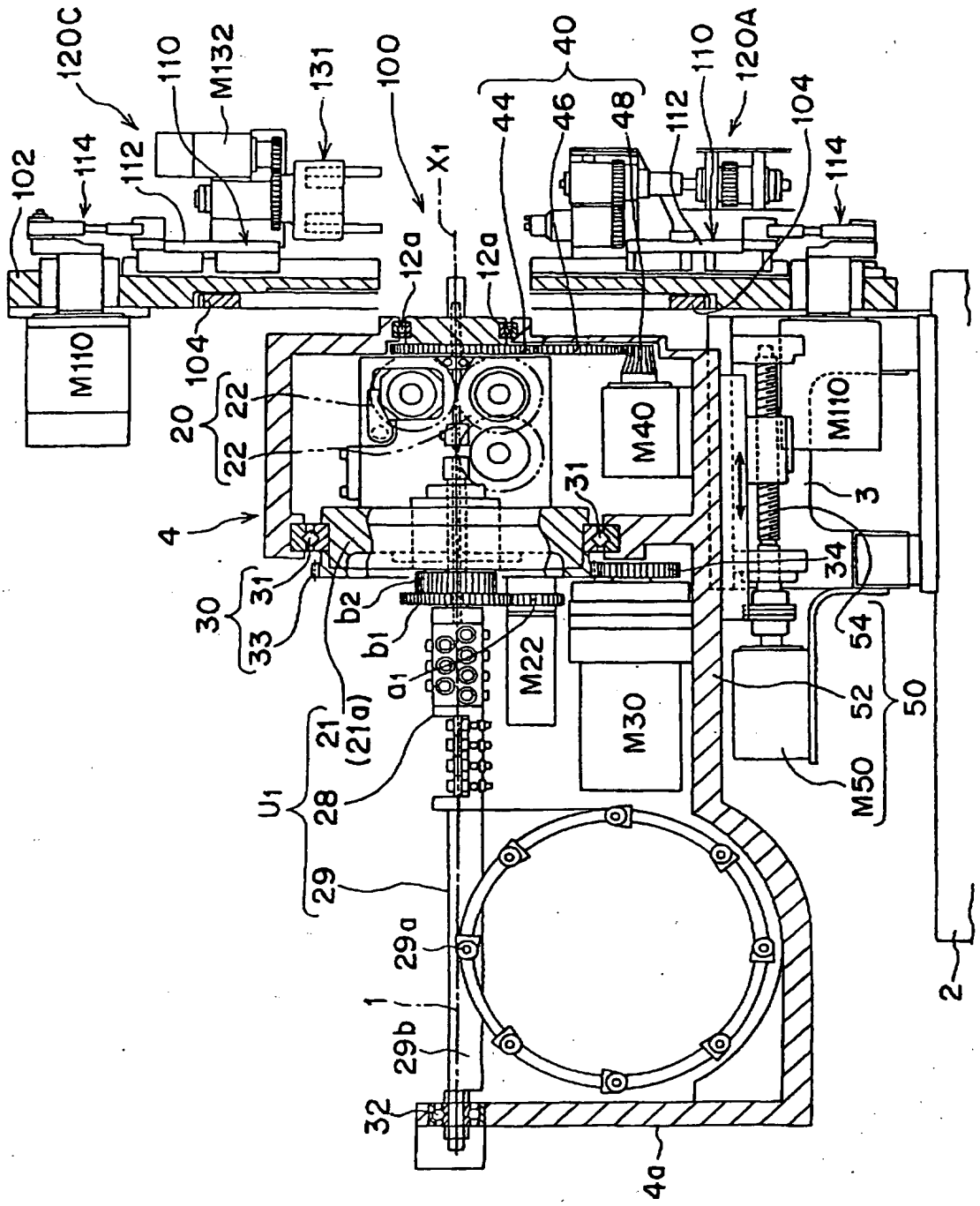

120C
110
M132
131
100
40
110
120A
102
114
112
X1
44
46
48
112
104
114
M110
104
12a
12a
20
22
22
M40
M110
4
31
3
34
30
31
33
b2
b1
a1
M22
M30
54
52
50
21
(21a)
28
U1
29
M50
29a
1
29b
32
4a
2

Figure 3

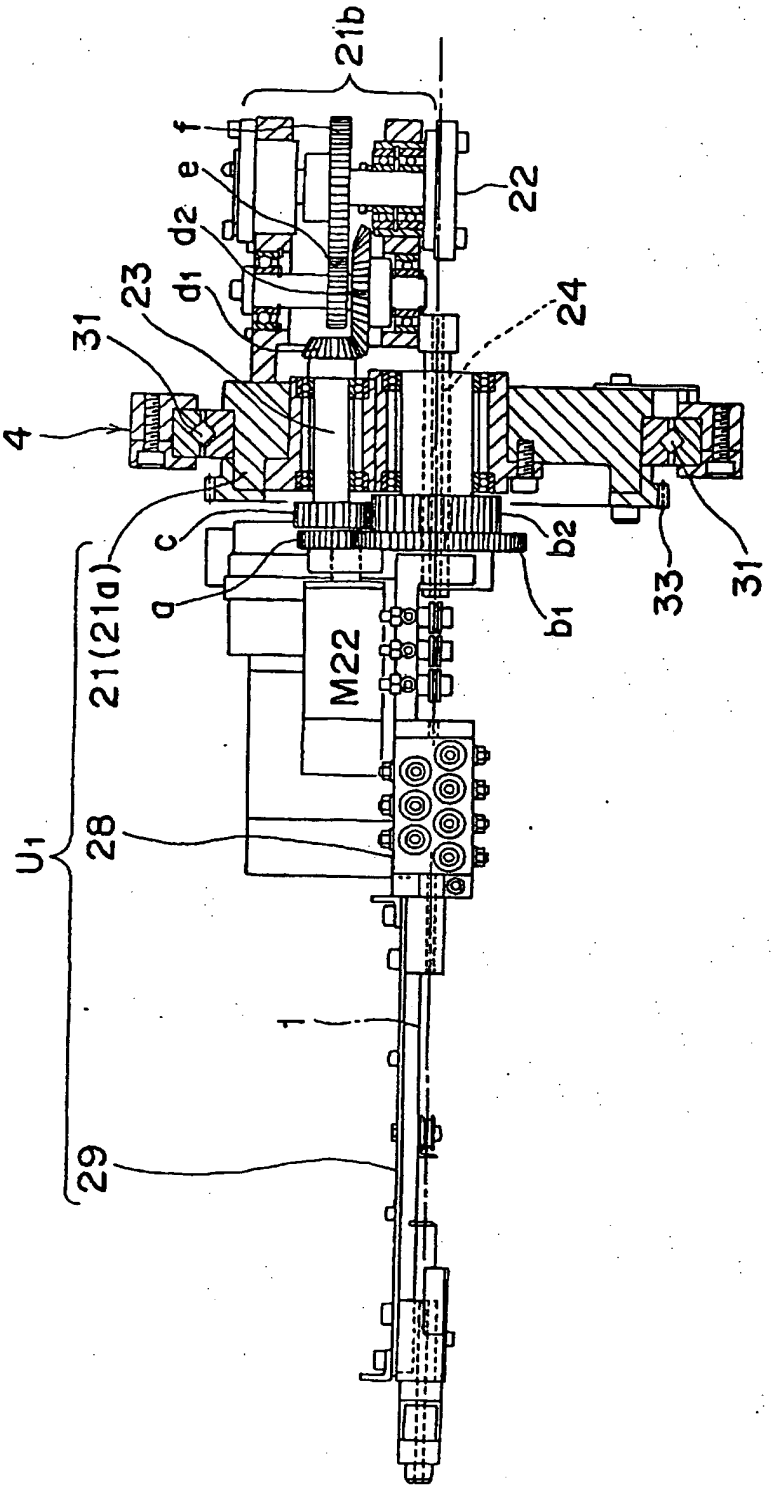


Figure 4

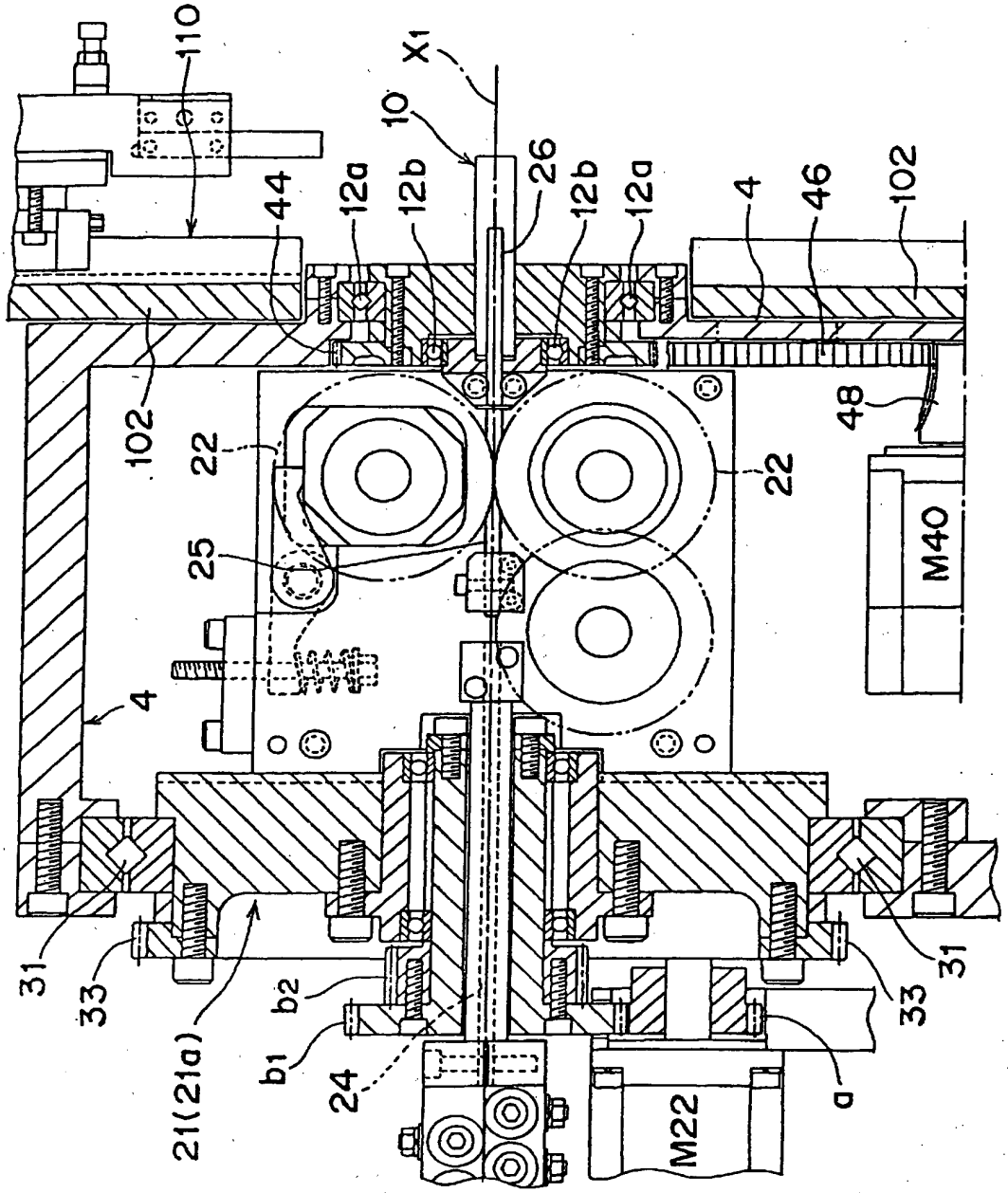

110
X1
10
26
44
12a
12b
12b
12a
4
46
102
102
48
22
22
25
M40
4
31
33
b2
b1
24
21(21a)
33
31
a
M22

Figure 5

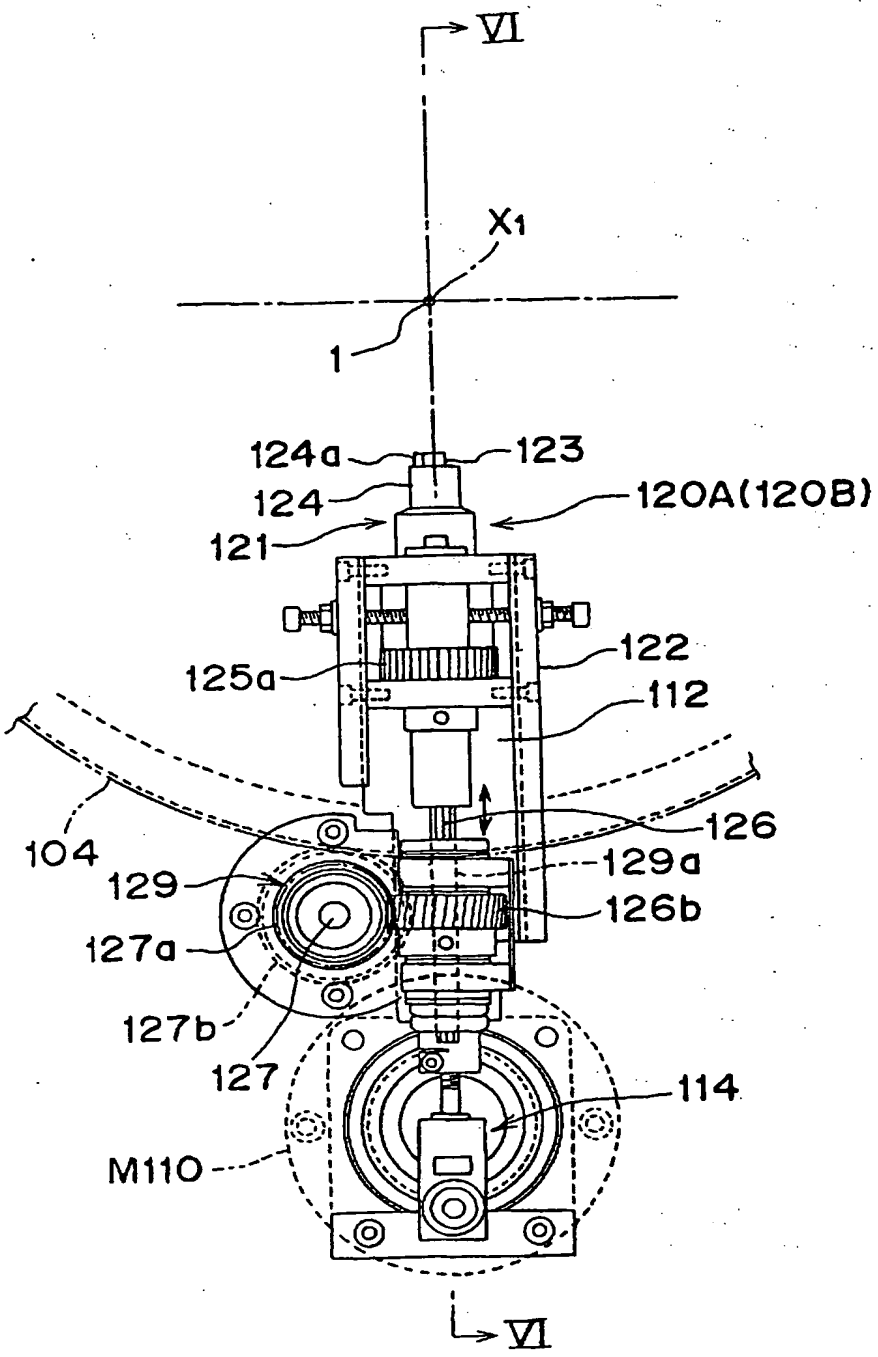

VI
X1
1
124a
123
124
120A(120B)
121
122
125a
112
126
104
129a
129
126b
127a
127b
127
114
M110
VI

Figure 6

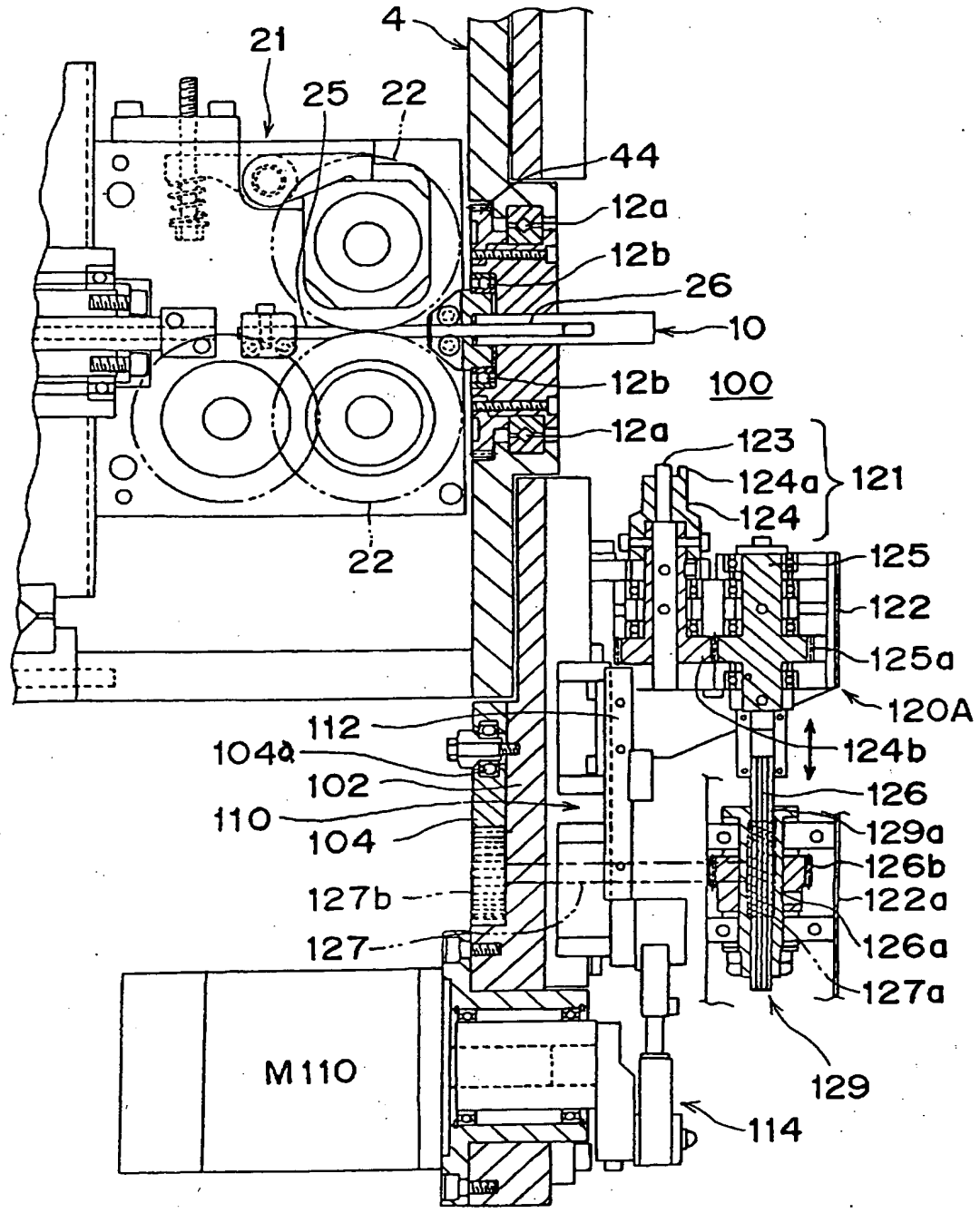

4
21
25
22
44
12a
12b
26
10
12b
100
12a
123
124a
121
124
125
122
125a
120A
112
104a
102
110
104
124b
126
129a
126b
122a
126a
127b
127
127a
M110
129
114
22

Figure 7

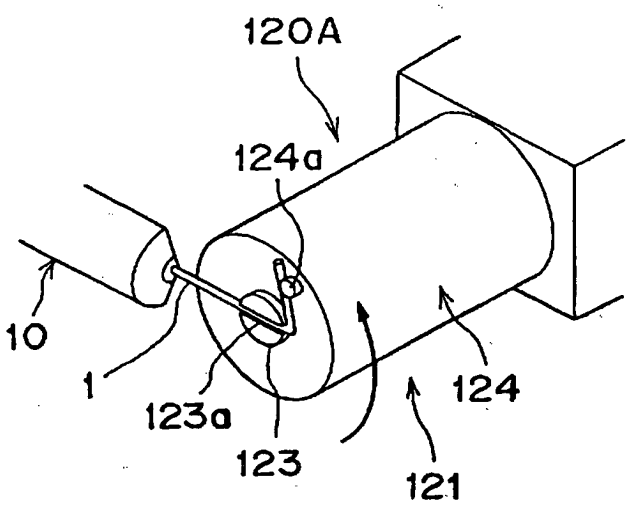


Figure 8

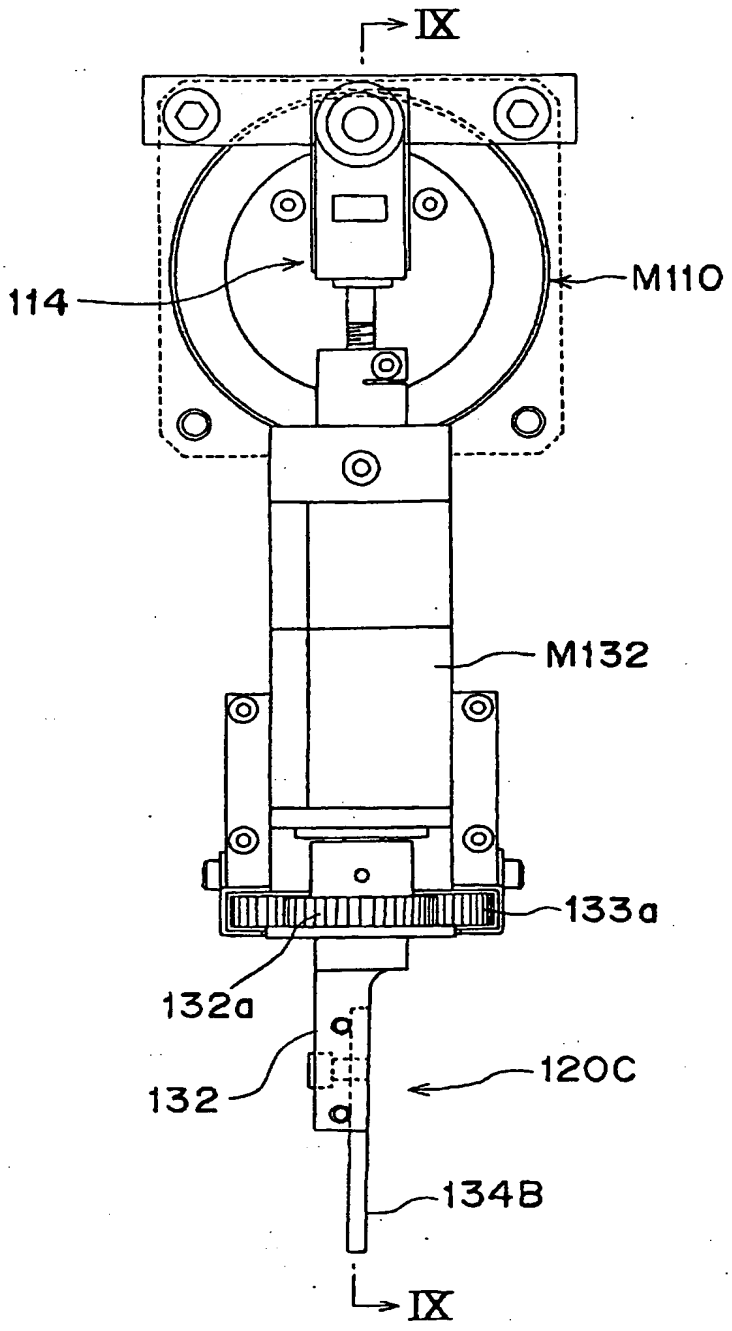


Figure 9

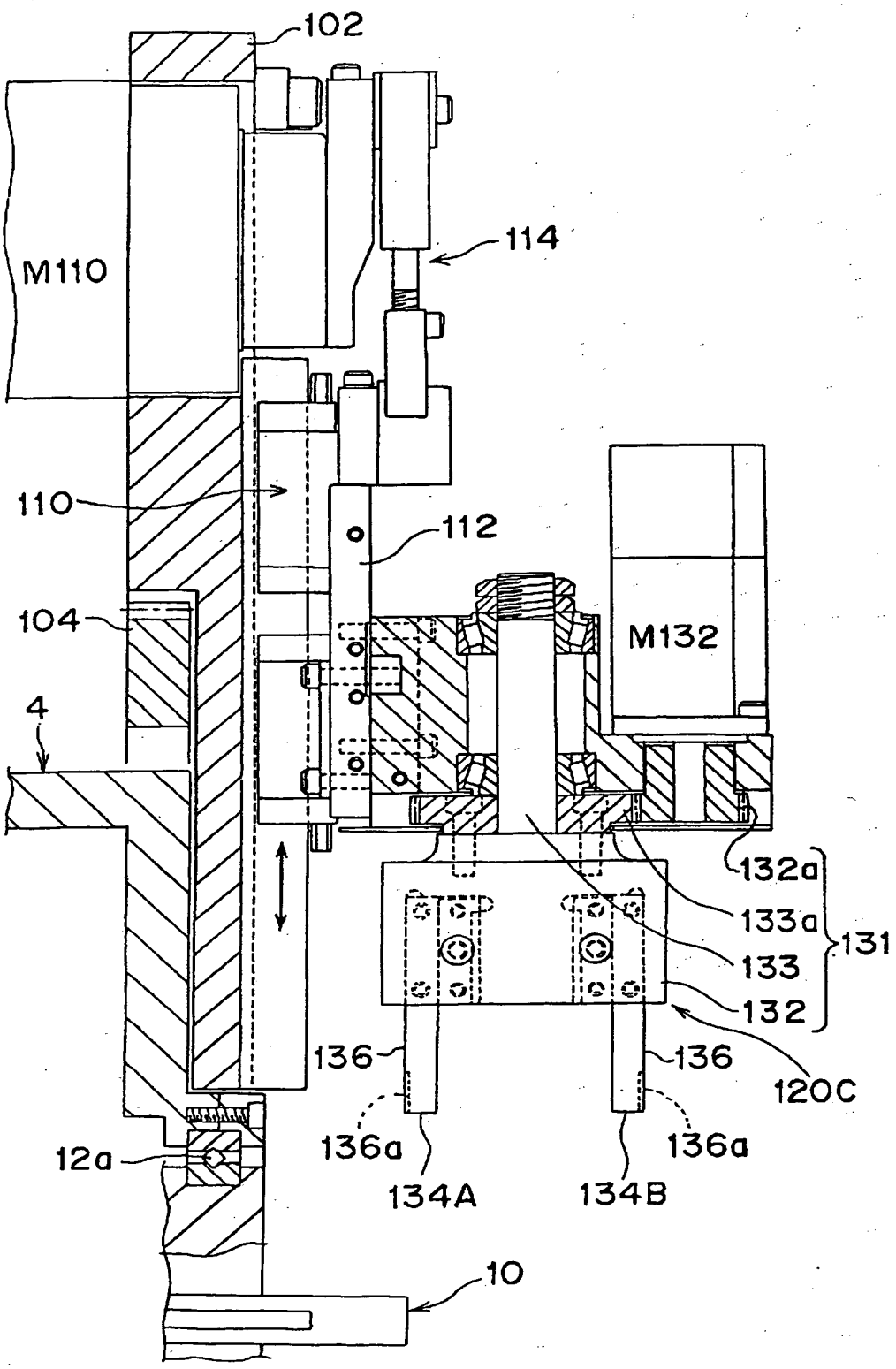

102
M110
114
110
112
104
M132
4
132a
133a
133
131
132
136
136
120C
136a
136a
12a
134A
134B
10

Figure 10

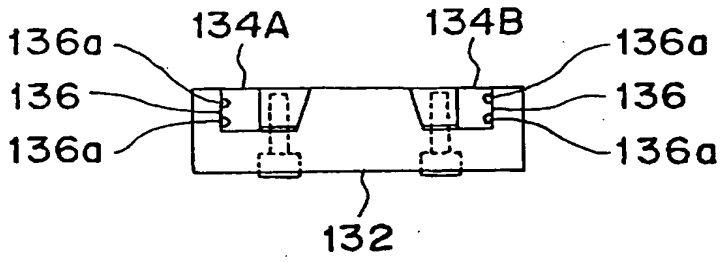


Figure 11

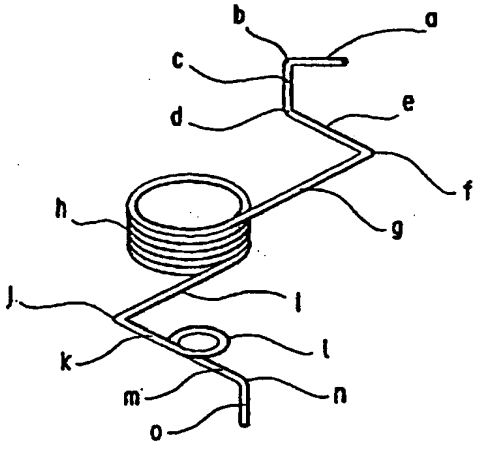
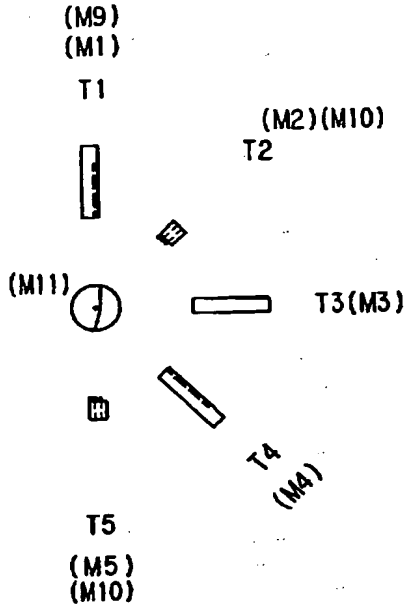
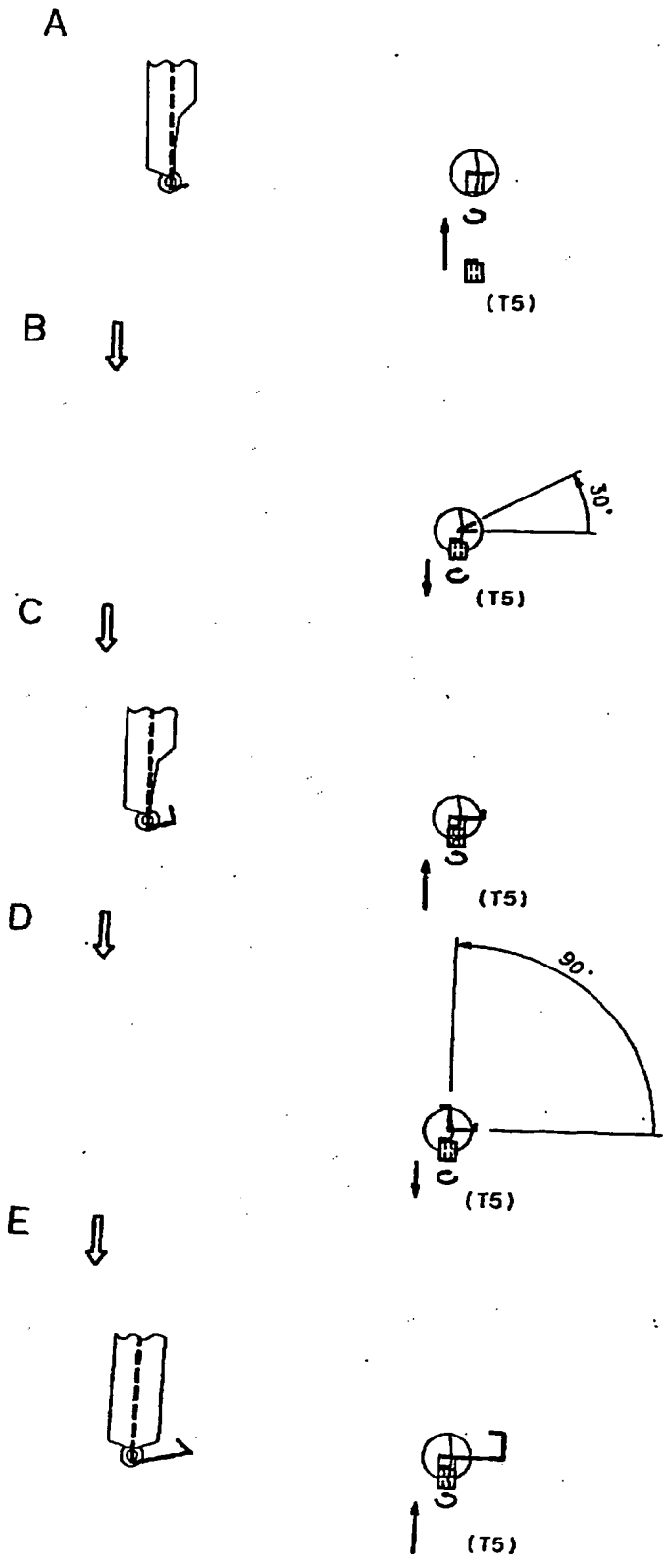


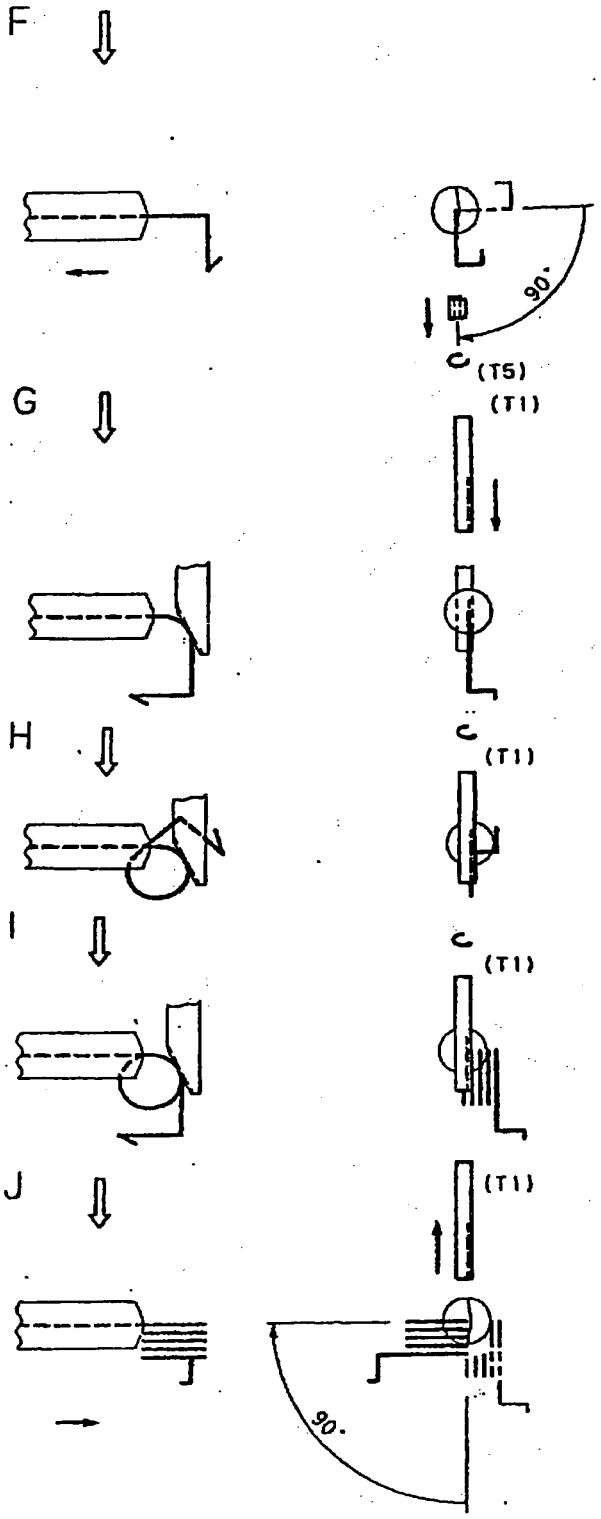
Figure 12



Figures 13



Figures 14



Figures 15

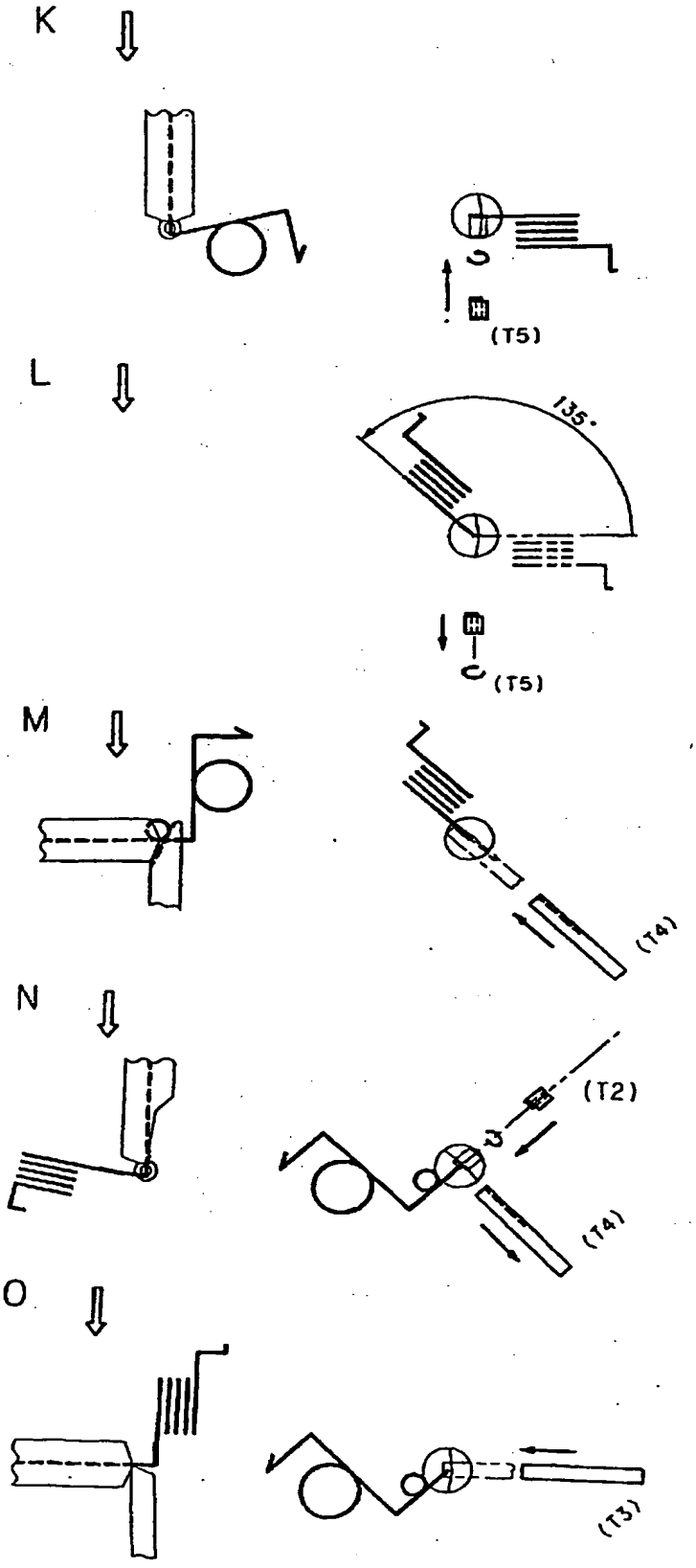
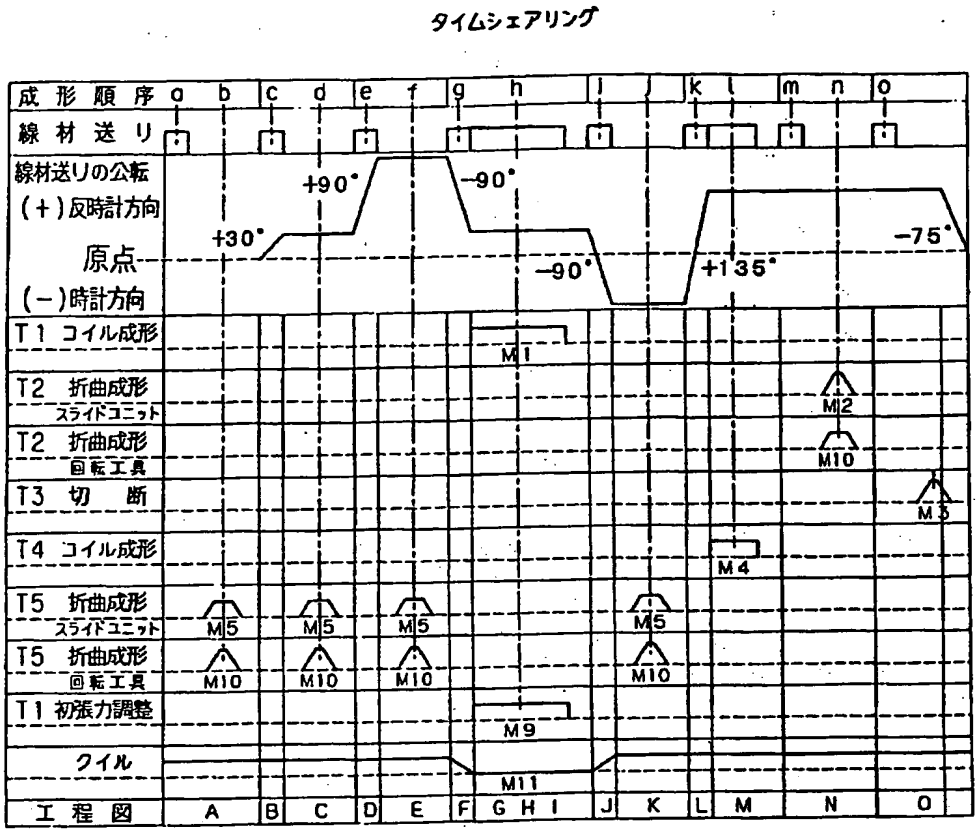


Figure 16


タイムシェアリング
成形順序 a b c d e f g h i j k l m n o
線材送り
線材送りの公転
(+)反時計方向
原点
(−)時計方向
+30°
+90°
−90°
−90°
+135°
−75°
T1 コイル成形
M1
T2 折曲成形
スライドユニット
M2
T2 折曲成形
回転工具
M10
T3 切断
M3
T4 コイル成形
M4
T5 折曲成形
スライドユニット
M5
T5 折曲成形
回転工具
M10
T1 初張力調整
M9
クイル
M11
工程図
A B C D E F G H I J K L M N O